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Mazdoor Kisan Shakti Sangathan

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Jawaharlal Nehru

“Step Out From the Old to the New”

IS 1101 (1981): Handloom Cotton Cellular Shirting [TXD 8: Handloom and Khadi]



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Bhartrhari—Nitiśatakam

“Knowledge is such a treasure which cannot be stolen”

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Indian Standard

SPECIFICATION FOR
HANDLOOM COTTON CELLULAR SHIRTING

(First Revision)

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Indian Standard

SPECIFICATION FOR HANDLOOM COTTON CELLULAR SHIRTING

(*First Revision*)

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Indian Standard

SPECIFICATION FOR HANDLOOM COTTON CELLULAR SHIRTING (*First Revision*)

0. FOREWORD

0.1 This Indian Standard (First Revision) was adopted by the Indian Standards Institution on 9 November 1981, after the draft finalized by the Handloom and Khadi Sectional Committee had been approved by the Textile Division Council.

0.2 This standard, which was first published in 1957, has been revised in order to make it up-to-date. Important changes carried out in the standard are:

- a) deletion of breaking strength values since the standard recommends the use of yarn conforming to IS :171-1973*; and .
- b) inclusion of inspection, marking and packing clauses.

0.3 Standards of Weights and Measures Act, 1976 stipulate the use of International Systems of Units in the country; in order to familiarize the industry with this system, the recommended SI units for use in the textile industry are given in Appendix A.

0.4 For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test, shall be rounded off in accordance with IS : 2-1960†. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

1. SCOPE

1.1 This standard prescribes the constructional particulars and other requirements of two varieties of handloom cotton cellular shirting, bleached, dyed, striped or check.

*Specification for grey cotton yarn (*second revision*).

†Rules for rounding off numerical values (*revised*).

IS : 1101 - 1981

1.2 This standard does not specify the general appearance, feel, finish, shade, etc, of the cloth (see *also* 3.3).

2. MANUFACTURE

2.1 Yarn — The cotton yarn used in the manufacture of shirting should be satisfactory in evenness and reasonably free from neps and spinning defects. The yarn shall conform to Grade 'C' of IS:171-1973*.

2.2 Cloth — The shirting shall be free from dressing and filling materials and from substances liable to cause subsequent tendering.

3. REQUIREMENTS

3.1 The constructional particulars of shirting shall conform to those given in Table 1.

3.2 The colour fastness ratings and other requirements of shirting shall conform to those given in Table 2.

3.3 If in order to illustrate or specify the indeterminable characteristics such as general appearance, lustre, feel, and shade of the shirting, a sample has been agreed upon and sealed, the supply shall be in conformity with the sample in such respects.

3.3.1 The custody of the sealed sample shall be a matter of prior agreement between the buyer and the seller.

4. INSPECTION

4.1 The shirting when visually inspected should be reasonably free from the following defects:

- a) More than two adjacent ends running parallel, broken or missing and extending beyond 20 cm;
- b) Weft crack or more than two missing picks across the width of the material;
- c) Prominently noticeable weft bar due to the difference in material, count, twist, lustre, etc;
- d) Noticeable selvage defects;
- e) Noticeable warp or weft float in the body;
- f) Noticeable oil or other stains;
- g) Noticeable hole, cut or tear up to 3 mm in size;

*Specification for grey cotton yarn (second revision).

- h) Smash rupturing the texture of the fabric;
- j) Undressed snarls noticeable throughout the piece;
- k) Conspicuous gout due to foreign matter usually lint or waste woven into cloth;
- m) Conspicuous broken pattern; and
- n) Any other flaw which would mar the appearance or affect the serviceability and/or durability of the cloth.

4.1.1 A reference may be made to IS : 4125-1967* for details of these defects.

5. MARKING

5.1 The shirting shall be suitably marked or labelled with the following information:

- a) Name of the material and variety number;
- b) Manufacturer's name, initials or trade-mark;
- c) Length and width of the piece; and
- d) Count of warp and weft yarn.

5.1.1 The product may also be marked with Standard mark.

5.2 The use of the Standard Mark is governed by the provisions of the *Bureau of Indian Standards Act, 1986* and the Rules and Regulations made thereunder. The details of conditions under which the licence for the use of Standard Mark may be granted to manufacturers or producers may be obtained from the Bureau of Indian Standards.

6. PACKING

6.1 Unless otherwise agreed upon by the buyer and the seller, the shirting shall preferably be packed in bales or cases in conformity with the procedure laid down in IS : 1347-1972† or IS : 293-1980‡.

*Glossary of terms pertaining to defects in fabrics.

†Code for inland packaging of cotton cloth and yarn (*first revision*).

‡Code for seaworthy packaging of cotton cloth and yarn (*third revision*).

TABLE 1 CONSTRUCTIONAL PARTICULARS OF **HANDLOOM** COTTON CELLULAR SHIRTING
(Clause 3.1)

VARIETY No.	COUNT OF YARN (see NOTE 1) COTTON COUNT (UNIVERSAL COUNT)		ENDS/ cm	PICKS/ cm	LENGTH	WIDTH	WEAVE
	Warp	Weft					
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1*	20s (30 tex)	14s (42 tex)	28	18	m 20 or as declared	cm 70, 75 or as agreed	4 end Cel- lular
2	30s/2 (20 tex x 2)	10s (59 tex) or 12s (50 tex)	20	18			3 x 3 Mock Leno
9 Tolerance, percent	—		±5	±5	See Note 2	±2	—
Method of Test	—	—	IS :1963-1981†		IS :1954-1969‡		Visual

NOTE 1 — Count of yarn is given for guidance only.

NOTE 2 — The length shall be not less than the declared or marked value.

*In case of variety No. 1, the use of 2-fold warp yam whose equivalent count is equal to the count of the single warp yam is permissible.

†Methods for determination of threads per unit length in woven fabrics (second revision).

‡Methods for determination of length and width of fabrics (first revision).

TABLE 2 REQUIREMENTS OF HANDLOOM COTTON CELLULAR SHIRTING

(C'ause 3.2)

SL No.	CHARACTERISTIC	REQUIREMENT	METHOD OF TEST
(1)	(2)	(3)	(4)
i) Colour fastness to:			
	a) Light	5 or better	} (See Note) IS : 24541967'
	b) Washing : Test 4	4 or better	
	c) Bleaching	4 or better	
	d) Perspiration	4 or better 3	
	ii) Dimensional change, percent, Max	4	IS : 2977-1964
	iii) Scouring loss, percent, Max	2.5	IS : 1383-1977¶ (Mild Method)

NOTE-The rating specified is in accordance with IS: 6906-1982**, which is the basic document on colour fastness to various agencies.

*Method for determination of colour fastness of textile materials to artificial light (xenon lamp).

†Method for determination of colour fastness of textile materials to washing : Test 4 (*revised*) :

#Method for determination of colour fastness of textile materials to hypochlorite bleaching.

§Method for determination of colour fastness of textile materials to perspiration.

||Method for determination of dimensional changes of woven fabrics (other than wool) on soaking in water.

¶Method for determination of scouring loss in grey and finished cotton textile materials (*first revision*).

**Requirements for colour fastness of handloom cotton textiles (*first revision*).

7. SAMPLING

7.1 Lot -The quantity of handloom cotton cellular shirting of the same variety, width and colour delivered to a buyer at a time shall constitute a lot.

7.2 To ascertain the conformity of the lot to the requirement of this standard, sample shall be drawn and inspected from each lot separately.

7.3 The number of pieces to be selected at random for inspection shall be in accordance with Table 3.

TABLE 3 SAMPLE SIZE AND PERMISSIBLE NUMBER OF NON-CONFORMING PIECES

LOT SIZE	SAMPLE SIZE	PERMISSIBLE NUMBER OF NON-CONFORMING PIECES	SUB-SAMPLE SIZE	PERMISSIBLE NO. OF NON-CONFORMING PIECES
(1)	(2)	(3)	(4)	(5)
Up to 25	3	0	2	0
26 „ 50	5	0	2	0
51 „ 150	8	0	3	0
151 „ 300	13	1	3	0
301 „ 500	20	1	5	0
501 „ 1000	32	2	8	1
1 001 and above	50	3	8	1

7.4 Number of Tests and Criteria for Conformity

Characteristic	Number of Tests	Criteria for Conformity
Visual inspection, ends, picks, length and width	According to col 2 of Table 3	Number of non-conforming pieces not to exceed corresponding number given in col 3 of Table 3
Dimensional change	According to col 4 of Table 3	Number of non-conforming pieces not to exceed corresponding number given in col 5 of Table 3
Colour fastness to washing, bleaching, perspiration and scouring loss	do	All the test specimens meet the corresponding requirements
Colour fastness to light	to 2 for lot size of 300 or less and 3 otherwise	do

APPENDIX A(*Clause 0.3*)**RECOMMENDED SI UNITS FOR TEXTILES**

<i>Sl No.</i>	<i>Characteristic</i>	<i>SI Unit</i>		<i>Application</i>
		Unit	Abbreviation	
(1)	(2)	(3)	(4)	(5)
1. Length	Millimetre	mm		Fibres
	Millimetre, centimetre	mm, cm		Samples, test specimens (as appropriate)
	Metre	m		Yarns, ropes, cordage, fabrics
2. Width	Millimetre	mm		Narrow fabrics
	Centimetre	cm		Other fabrics
	Millimetre, centimetre	mm, cm		Samples, test specimens (as appropriate)
	Centimetre, metre	cm, m		Carpets, druggets, <i>DURRIES</i> (as appropriate)
3. Thickness	Micrometre (micron)	µm		Delicate fabrics
	Millimetre	mm		Other fabrics, carpets, felts
4. Linear density	Tex	tex		Yarns
	Millitex	mtex		Fibres
	Decitex	dtex		Filaments, filament yarns
	Kilotex	ktex		Slivers, ropes, cordage
5. Diameter	Micrometre (micron)	Pm		Fibres
	Millimetre	mm		Yarns, ropes, cordage

<i>Sl No.</i>	<i>Characteristic</i>	<i>SI unit</i>		<i>Application</i>
		Unit	Abbreviation	
(1)	(2)	(3)	(4)	(5)
6.	Circumference	Millimetre	mm	Ropes, cordage
7.	Threads in fabric			Woven fabrics (as appropriate)
	a) Lengthwise	Number per centimetre Number per decimetre	ends/cm ends/dm	
	b) Widthwise	Number per centimetre Number per decimetre	picks/cm picks/dm	
8.	Warp threads in loom	Number per centimetre	ends/cm	Reeds
9.	Stitches in knitted fabric			Knitted fabrics (as appropriate)
	a) Lengthwise	Courses per centimetre Courses per decimetre	courses/cm courses/dm	
	b) Widthwise	Wales per centimetre Wales per decimetre	wales/cm wales/dm	
10.	Stitch length	Millimetre	mm	Knitted fabrics, made-up fabrics
11.	Mass per unit area	Grams per square metre	g/m²	Fabrics
12.	Mass per unit length	Grams per metre	g/m	Fabrics

<i>SI Characteristic</i>		<i>SI Unit</i>		<i>Application</i>
		Unit	Abbreviation	
(1)	(2)	(3)	(4)	(5)
13. Twist		Turns per centimetre	turns/cm	Yarns, ropes, cordage (as appropriate)
		Turns per metre	turns/m	
14. Test or gauge length		Millimetre, centimetre	mm, cm	Fibres, and yarns fabric specimens (as appropriate)
15. Breaking load		Millinewton	mN	Fibres, delicate yarns (individual or skeins) Strong yarns (individual or skeins), ropes, cordage, fabrics
		Newton	N	
16. Breaking length		Kilometre	km	Yarns
17. Tenacity		Millinewton per tex	mN/tex	Fibres, yarns (individual or skeins)
18. Twist factor or twist multiplier		Turns per centimetre \times square root of tex	turns/cm $\times \sqrt{\text{tex}}$	Yarns (as appropriate)
		Turns per metre \times square root of tex	turns/m $\times \sqrt{\text{tex}}$	
19. Bursting strength		Newton per square centimetre	N/cm ²	Fabrics

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<i>Sl</i> <i>No.</i>	<i>Characteristic</i>	<i>SI Unit</i>		<i>Application</i>
		Unit	Abbreviation	
(1)	(2)	(3)	(4)	(5)
20.	Tear strength	Millinewton, newton	mN, N	F a b r i c s (a s appropriate)
21.	Pile height	Millimetre	mm	Carpets
22.	Pile density	Mass of pile yarn in grams per s q u a r e metre per millimetre pile height	g/m ² /mm pile height	Pile carpets
23.	Elastic modulus	Millinewton per tex per unit deformation	mN/tex/unit deforma- tion	Fibres, yarns, strands

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